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The EXTENSION ANIMAL HUSBANDMAN

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THE EXTENSION ANIMAL HUSBANDMAN

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C. D. Lowe, Senior Extension Animal Husbandman,
K. F. Warner, Senior Extension Meat Specialist.

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SPECIAL NOTICE

This will be the last issue of this publication "for the duration." After the war we hope to contact you again through this same medium. Until then, so long!

--The Editors

THE CONTROL OF LIVESTOCK PARASITES AS A WARTIME ACTIVITY

By A. O. Foster, Associate Parasitologist and L. A. Spindler, Zoologist, Zoological Division, U. S. Bureau of Animal Industry

About one-half of the losses from disease among farm animals is caused by animal parasites. It has been conservatively estimated that internal parasites of livestock cause, in normal times, an annual loss of about $125,000,000 due to deaths of young animals, unthriftiness and stunting in parasitized survivors, and condemnations of carcasses and parts under meat inspection and other slaughter procedures. As to losses caused by external parasites, it has been estimated that ox-warbles alone produce $50,000,000 damage each year. In ordinary times, the control of parasites affecting livestock is chiefly a matter of achieving greater economy in the production of animal foods and fiber. Now the situation is extraordinary, and the demands upon the livestock industry are unprecedented. War demands the conservation of all resources, especially food. Under the present conditions of increasing production of food animals, there is danger that the losses may increase beyond all proportion to increases in livestock population unless a determined and concerted effort is made to check the potential destruction by parasitic diseases. The United Nations depend upon the livestock industry of America for much of their food and clothing. In no small measure, the war will be won by the proficiency of this industry at home as much as by the performance of our armies and fleets on the battle fronts. "Food will win the war and write the peace." The army, of necessity, "marches on its stomach" and the home forces cannot maintain their productive capacity and fighting morale without an abundance of good food. America is an abundant food producer, but the task before farmers today is to provide in sufficient abundance that neither the armed forces nor the civilians of any of the United Nations shall be impaired in their war efforts by want of meat, lard, milk, eggs, wool, and leather as well as many lesser but highly important items, such as hides, skins, furs, bristles, hairs, and certain therapeutic preparations. Moreover, it will probably be necessary in winning the war to increase the use of horses on farms and in many other places where they can be substituted for machine power. It therefore devolves upon the animal husbandman to bend every effort to increase the efficiency of horses and mules to take the place of rationed gas, rubber, and metals.

In order that farmers may be assisted in meeting the demands thrust upon them, and that they may come into a deeper sense of their part in winning the war, it is the intention of this article to point out, by examples, a few ways in which careful and directed control of parasites will contribute to the war effort.

Controlling Sheep Parasites -

Sheep in the Western Hemisphere have become especially important because of the distant and difficult position of Australia, the greatest

sheep-raising country, and because of the fact that a large portion of the peoples of the United Nations are dependent upon us for lamb and mutton, wool, casings, and surgical catgut. Sheep suffer relatively more seriously from parasitism than do any other kind of livestock. The importance of parasites is the more evident because, in this country, sheep rarely have tuberculosis, which is one of the serious threats to cattle and swine, and among sheep there is nothing comparable to the devastating outbreaks of hog cholera. The important parasites of sheep are the gastro-intestinal roundworms (stomach worms, nodular worms, trichostrongyles, and others), liver flukes, and certain arthropod parasites, including nose bots, screwworms ticks and mites.

The large stomach worm, Haemonchus contortus, is the most injurious of the internal parasites of sheep. It alone causes losses amounting to several million dollars each year to sheep raisers in this country. The worms occur in the fourth stomach (abomasum) and are readily recognized by the "barber-pole" appearance of the mature females. Stomach worms disease is commonest in the South and East, but is also more or less prevalent in the Middle West, and in the low, wet areas throughout the country. In spite of the great economic loss that is caused by this disease, stomach worms can be removed by appropriate medication and can be prevented from causing serious damage to sheep by combining timely medication with good pasture hygiene.

Copper sulfate or bluestone is the cheapest effective drug for use against stomach worms. A 2 percent solution appears to be preferable to the 1 percent copper sulfate drench that has been customarily used in this country. The 2 percent copper sulfate drench is prepared by dissolving 1/2 pound of clear crystals of bluestone in one quart of boiling water, then adding enough cold water to make three gallons. This amount will treat nearly 200 mature sheep. The doses of this solution are: 2 oz. for adult sheep, 1 1/2 oz. for yearlings, 1 oz. for lambs over three months.

Phenothiazine is the newest drug that has come into wide use and is effective against the greatest variety of internal parasites. The dose for adult sheep is 25 grams or approximately 1 ounce. For lambs weighing less than 60 pounds, doses of 15 grams are generally adequate. This drug may be administered in the feed or it may be given in capsules or as a drench.

Effective control of stomach worms depends chiefly upon timely and efficient medication, and many systems of treatment are in use. Since other parasites are usually present, in addition to stomach worms, these must be reckoned with in planning a control program. Because most parasites are carried through the winter in breeding stock it is desirable, in northern climates, that one or two doses of phenothiazine be given to the pregnant ewes. During the summer months and in southern climates copper sulfate may be administered periodically for controlling stomach worms. In addition to medication, sheep should be shifted to new pastures as often as these are available. Resting the pastures not only permits the growth of new forage but also results in a material reduction in the number of infective larvae upon them.

Nodular disease is a serious problem in the Southern and Eastern States, especially among farm flocks. It is a less serious problem elsewhere. It has been estimated that this disease accounts for a potentially preventable loss of 100,000,000 pounds of lamb annually. It also causes an estimated loss of $6,000,000 a year from the discarding of parasitized intestines alone. Phenothiazine, coupled with pasture hygiene, is the only known effective weapon against this disease. Present evidence indicates that infective larvae of nodular worms cannot survive on pastures during moderately severe winters. It is therefore important that the adult nodular worms in breeding flocks be destroyed by appropriate medication during the winter.

Sheep liver flukes are prevalent in the western coastal States, Intermountain States, and in parts of the South. These parasites are responsible for serious weight losses and, because of them, many livers are rendered unfit for use as food. A considerable saving could be effected if steps were taken to destroy snails on wet areas that are accessible to sheep, or if sheep were kept off wet pastures in areas where liver flukes are prevalent. In such areas, affected sheep should be treated with carbon tetrachloride, 1 cc per head, once in October and once in November. Additional treatments should be given when indicated.

Certain parasites are regionally very important, such, for example, as screwworms. Farmers and ranchers in Florida and Texas ascribe losses of from $5,000,000 to $10,000,000 to these maggots. In view of preventive measures now available, this is a preventable loss.

Controlling Cattle Parasites -

Obviously, cattle are very important in time of war. They are attacked by many of the stomach and intestinal roundworms that are found in sheep, and, in general, the same treatments and methods of control that are used for sheep can be employed for cattle. There are no definite financial data on the damage caused by internal parasites in these animals, but it is considerable. Roundworms and liver flukes cause deaths and stunting among calves, while older survivors that have suffered severe parasitism are generally underweight. This results in less beef, milk, and milk products. The damage by grubs or warbles, usually estimated at about $50,000,000 a year and by some considered to have amounted to nearly $100,000,000 in bad years, is especially serious under war conditions. The annoyance due to attacks by the flies while laying their eggs is estimated to result in a reduction of from 10 to 25 percent in milk flow. The migrations of the grubs through the tissues have a generally debilitating effect. Holes caused by the grubs appear along the back, the portion from which the best leather is cut.

Repellents offer some protection against cattle grubs, but the systematic application every 25 or 30 days during the grub season of a derris or cube wash affords reasonably good control. Extraction of the grubs by hand, if repeated regularly, is also a grub control procedure.

Controlling Swine Parasites -

Pork and pork products, including lard, are among the most important foods of animal origin. A rapid expansion in swine production is necessary to meet wartime needs for these important articles of diet. Much of this increase will be produced by farmers who are already in the hog business, by increasing their hog numbers. Increases in production will tend to increase the concentration of hogs on premises; under such conditions parasitism and attendant losses may be expected to increase.

The most important of the parasites that affect swine are ascarids, kidney worms, lungworms, thorn-headed worms, nodular worms, and intestinal threadworms. Kidney worms occur chiefly in the Southern States; the others occur wherever pigs are raised. In spite of the widespread distribution of parasites their injurious effects may be avoided by raising pigs under sanitary conditions where they will be protected from infection with parasites especially during the suckling period. A plan of management for sows and litters whereby this may be accomplished is outlined below.

(1) Shortly before farrowing time thoroughly clean farrowing houses and pens and then scrub with scalding water and lye. The more thorough the cleaning process the less will be the danger of infection of the pigs with parasites.

(2) Wash the sows with warm water and soap just before they are put into the farrowing pens.

(3) Transfer the sows and litters to clean pasture. As soon as weather permits, the sows and litters should be hauled to a clean field that has previously been plowed and sown to a suitable forage crop. No other hogs should be allowed on this pasture.

(4) Keep the young pigs in the clean pasture until they are at least 4 months old. By the time the pigs are 4 months old, they are usually past the stage of greatest susceptibility to the effects of most parasite infections.

In the case of pigs farrowed in summer or early fall, the farrowing may be done on clean pastures, individual A-type farrowing houses being provided for the sows. If the sows have been on pasture and are not encrusted with dirt and filth they need not be washed before being placed on the pasture. The sows and litters may remain on the pasture until the pigs are weaned. For best results pigs should be kept on clean ground until marketed.

A modification of the above plan may be used to control kidney worms in the Southern States where farrowing is customarily carried out on pasture.

Shortly before farrowing the pregnant sows are placed on a field that has been plowed and sown to a suitable forage crop. The A-type farrowing

houses, water barrel, creep for the young pigs, and a feeding pen for the sows are located on a bare strip which is at least 30 feet wide and located at one end of the field. A bare strip at least 5 feet wide should also extend along the fence on each of the other three sides of the field and this strip should be kept free of vegetation and trash at all times. The farrowing houses should be located close to and facing the fence.

This arrangement of equipment is designed to insure, as far as possible, that the majority of the kidney worm eggs passed by the sows will fall on bare soil where they will be destroyed by sunlight and drying. Feeding the sows in a pen to which pigs are not admitted at any time serves to concentrate much infective material in locations where the pigs will not come in contact with it.

Controlling Horse Parasites -

In the case of horses, the problem is one of conserving working efficiency. Not only are efficient horses and mules required by the army, but these animals must be depended upon for agricultural needs and, to some extent, for the replacement of trucks in city and suburban hauling. Internal parasites, especially ascarids, bloodworms, and bots, are among the important causes of reduced working efficiency. These parasites can be controlled by proper medication, systematic manure disposal, and adequate pasture hygiene. In treating for the control of strongyles, it is believed that phenothiazine, in doses of from 30 to 40 grams, while animals are on full feed, given once in June and again in late autumn, is effective and generally satisfactory.

Importance of Parasite Control in Wartime -

The cases reviewed above are only a few of the more important ones. The ravages caused by the innumerable other parasites, although individually less important, are in the aggregate very serious, and must not be overlooked during the emergency.

Finally, it cannot be too strongly emphasized that peace-time estimates of losses due to parasites have almost no significance in time of war. What were individual losses become national losses. Cattle grub holes in hides represent more than a loss of $2,500,000 to cattle raisers and to the leather industries; they represent a deficiency in the number and quality of shoes and other leather goods that can be furnished to troops and civilians. Six million dollars lost in sheep intestines infected with nodular worms means a deficiency in casings for processed food products and in surgical sutures, so necessary in time of war. If there is to be no preventable loss and no waste, better control measures for all parasitic diseases of livestock must be instituted. It is fortunate that the United States is among those nations that have spent considerable sums to find means of improving its domestic animals and controlling diseases. Because of this we are relatively well prepared to meet the present emergency, and it is preparedness along such lines as these that make for final victory. The Federal Bureau of Animal Industry is endeavoring to cooperate to the fullest extent with farmers and stockmen, and is prepared to furnish information at its command on matters pertaining to animal parasites and their control.----------oOo----------

MARKETING LIVESTOCK DURING THE EMERGENCY

By W. B. Stout, Senior Extension Economist,
U. S. D. A. Extension Service Washington, D.C.

On the thesis that food will win the war and write the peace, livestock producers and feeders throughout the United States have been asked to go all-out in producing and marketing more livestock in helping to meet the food needs of this nation and our allies. The response has been wholehearted, and present indications are that in 1942 we will produce for market around 12 million more hogs, and during the year we will market approximately 2 million more cattle and calves and over a million more sheep and lambs, than we did a year ago.

But the marketing of this huge volume of livestock will not be accomplished without difficulties. Transportation and processing and storage facilities have not kept pace with production. Shortages in raw materials brought about by the tremendous demands in the war industries have prevented expansion and even replacements in many industries. This is the situation in which we find ourselves in the marketing of livestock at the present time.

Railroad facilities available for transporting livestock have been decreased as increasing proportions of the livestock moved by truck. In 1924 there were 86 thousand stock cars available, but by 1941 this number has been reduced to 53 thousand cars. During the peak week of livestock loading in October, 1941, the number of available stock cars not in use was relatively small, and it is estimated that railroads can increase the volume of livestock hauled by only 10 to 15 percent during the seasons of heavy marketing. Furthermore, livestock pens, loading chutes and scales have been removed or allowed to deteriorate at many railroad loading points that formerly handled sizable volumes of livestock. Nevertheless, with the impending shortage of tires and trucks, steps should be taken to provide as complete utilization of railway facilities as possible.

The Office of Defense Transportation is considering our transportation problems from all angles, and steps are being taken to formulate solutions and devise economies for the movement of farm products to market. Consideration is being given to such problems as the coordination of truck and rail shipments, the removal of intra- and inter-state barriers to trade, the elimination of duplication in handling and transporting of livestock, less frequent pick-up services at the farm, the listing of livestock in advance of the time that it will move, the loading of trucks to capacity that are going to market and the arranging for back hauls to the point of origin. Such a program will necessitate a tremendous amount of educational and organization work and perhaps in regulation as well. It is absolutely necessary, however, that we proceed immediately with such a program if we are to conserve our tires and trucks and make them last for the duration of the war.

But transportation will not furnish the only problems in the marketing

of our livestock during the emergency. Mention has already been made of possible shortages in processing and storage facilities. Meat packers tell us that if they are to handle the huge volume of hogs that would normally go to market next December and January, which would probably be 1 1/2 to 2 million hogs a month more than were marketed last December and January, they will have to be granted priorities on large amounts of steel to increase the capacity of their plants. That is the same steel which is so desperately needed to produce tanks and ships and planes and guns; consequently, we need not expect a great increase in packing plant capacity in the near future.

So this is the problem that farmers themselves will have to help to solve, and it can be done by spreading the peak load of hogs during the season of heavy marketings. Such a procedure will alleviate the strain on processing plants and on our systems of transportation as well. Farmers should start now to meet this problem by employing the best feeding and management possible so as to have some of their hogs ready for market earlier than usual and by keeping some of their late pigs well into the winter. However, in making plans for marketing some hogs early, it should be remembered that the Government does not want farmers to market their hogs at light weights just for the sake of getting them to the market early. The United Nations are in great need of all the meats and fats they can get, and, therefore, all hogs should be fed to heavier weights than is normally the case.

Although the seasonal decline in hog prices this year is not expected to be great, producers can help in insuring against such a decline by following the procedure outlined in spreading hog marketings. Increased demand for pork and pork products at home and heavy purchases by the Government assure farmers of a good market for their hogs at favorable prices. During the past three months the Government has purchased about 40 percent of the pork and two-thirds of the lard for Lease-Lend shipments. Beginning next October, the Government will probably buy about 30 percent of the pork and two-thirds of the lard produced in this country. These purchases will be a tremendous factor in sustaining present hog prices.

Greatly increased production of agricultural products in 1941 and 1942 have put severe strain on our dry and cold storage plants. This situation will tend to get worse instead of better during the fall and winter months when farm products are being shipped to market in greater quantities. Moreover, due to the present tight situation in ocean shipping a part of the Lease-Lend purchases must be held for a time before they can be shipped. This will temporarily add to the shortage of dry and cold storage facilities which is another reason why effort should be made to spread hog marketings this fall and winter.

Extension personnel can help livestock producers and feeders tremendously by explaining the marketing situation which now confronts them and which will likely persist for the duration of the emergency. In many instances such assistance will need to go farther than merely presenting the facts involved

and will require individual and group assistance in helping farmers and ranchmen solve the particular situations which confront them in the marketing of their products. This is an opportunity which extension workers should not overlook, since stockmen will need all the help they can get in meeting the obligations which they have so willingly accepted.

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PERSONNEL NOTES

Ohio

L. P. McCann, the Ohio animal husbandry extension leader, spent some time in the cattle ranching sections of old Mexico during May.

Oregon

R. G. Johnson, who has been part-time range management specialist in extension is now head of the Animal Husbandry Division in the Animal Industries Department of the College.

South Carolina

A. L. DuRant, extension animal husbandman, was a member of an organized tour conducted by a commercial firm this spring to study livestock marketing and the various phases of the packing and meat merchandizing industries.

Wisconsin

T. E. Hamilton has been assisting with the animal husbandry program and handling the meat animal improvement work with juniors as well as the contest phases of adult sheep and swine production work.

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WHAT'S COOKIN'?

Many familiar foods will disappear from civilian dinner tables as war needs absorb them or divert customary food handling equipment to military uses. Some commercially-processed shipped-in foods will be replaced by fresh, locally grown products. Home-raised, boiled dinners may become more frequent. Country ham and eggs may have strategic value as well as popular appeal. Families may be known by the quality of their slow cooked pork and beans.

Spreading livestock production throughout the year so that good quality local meat will always be available is another war job. It will protect the community's food supply; relieve congestion at the packing centers; and maintain personal interest in "what's cooking."

--K. F. Warner

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KEEP 'EM WARM WHILE FLYING

By U. S. D. A. Specialists

The increased shearling production program sponsored by the War Production Board in response to the need for warm clothing for our aviators and other fighting men exposed to the rigors of cold and other adverse weather conditions has had splendid support to date from the sheep industry. However, the need for these warm sheep skins will be continuous so long as the present emergency lasts and thus every effort should be made to obtain just as large a supply of shearlings as possible from every potential source. No patriotic American would want to feel that one single aviator failed in his objective because he did not have the proper protection against the rigorous, high-altitude elements.

The shearling pelts carrying about one inch of wool are used to make the parts of the flyer's suit that go round the body. Skins with 3/8 to 3/4 inch of wool are used for making pants, boots, helmets and gauntlets. Many of the skins with only 1/4 inch of wool are used to make suits for the ground crews. About 80 square feet of tanned skin is required for a complete suit. This requires pelts from about 10 sheep.

Fortunately, by the action of our war policy agencies, the production of shearling skins is a profitable as well as a patriotic undertaking. This is made possible by Maximum Price Regulation No. 141 of the Office of Price Administration which became effective on May 13, 1942. It establishes ceiling prices for domestic raw shearlings, f.o.b. shipping point, on the per skin basis, as follows -

Grade No. 1 - (1/2" to 1" wool length) - $2.15 (This price was incorrectly stated as $2.05 in the original OPA release and repeated in the USDA "War Letter for Agriculture")
Grade No. 2 - (1/4" to 1/2" wool length) - $1.90
Grade No. 3 - (1/8" to 1/4" wool length) - 1.00
Grade No. 4 - (bare to 1/8" wool length and clipper-cut skins with less than 1/4" wool length, and all shearlings with a wool count of less than 46's) - $0.40

A recent OPA order removes the ceiling price on wool skins but does not affect the shearling situation. This action permits fairer trading in nonshearling pelts that carry varying amounts and grades of wool. Inasmuch as both the skins and the wool from these skins are covered by ceiling prices the overall values should not be changed.

The total supply of shearlings which meet government specification is being reserved for military use. Another regulation issued for the purpose of aiding the shearling program is that the War Production Board in Amendment No. 1 to General Conservation Order M-94, dated March 16, 1942. It reads as follows -

"No person shall hereafter pull or cause to be pulled any wool from any freshly flayed or salted sheep skin or lamb skin when the wool is of such length and type as to constitute a wool growth of 1 inch or less and of 46's grade or higher, except skins black or mottled with black, or so torn or damaged as to be unsuited for tanning purposes."

Under normal conditions our largest domestic supply of shearlings comes from Texas and adjacent areas in the late spring and early summer months. For the most part they are yearling wethers and shearling tanners consider them the ideal domestic shearling. However, the demands of the present emergency program are so broad that practically all sections of the country and all types of sheep production can make contributions to it.

The next large potential source of shearlings will be from the fed lambs of this coming fall and winter seasons, although it is hoped that some shearlings will be available from the slaughter lambs coming to market from both the range and farm States this summer and early fall.

Farmers and ranchmen should be made to feel that the secret in producing shearlings is to make it a definite part of their regular production program. The experienced feeder or grower knows just about when his lambs or sheep will be ready for market by their weight and condition at any particular time. Such information should be used as the basis for determining when to shear his animals in order to get the greatest total return. If he shears and ships immediately thereafter, he will find that he has either a No. 3 or No. 4 skin, neither of which is acceptable under military contracts and the price he receives for his lambs is apt to be discounted from $1.00 to $1.50 per head.

Since the type of comb used in shearing sheep has a direct influence on the amount of wool left on the animal and likewise is a factor in the length of time necessary to hold sheep after shearing, in order to produce shearling skins qualified to meet military specifications, all sheepmen should become familiar with the different types of combs. There are three principal types used in the shearing of sheep, the regular comb, the No. 5W, and the Texas goat comb. Experienced sheep raisers know that it is easier and more economical to shear sheep with a regular comb than to use one of the coarse or so-called thick combs. A good shearer will shear about 100 sheep a day using a regular comb. In shifting to a No. 5W comb his production will be cut down to 85 to 90 head. While if he uses a Texas goat comb he will drop still lower to 75-80 head per day.

Conditions will determine the type of comb to use. Normally it is better to use a regular comb as this increases production and cuts shearing costs. If lambs need about 6-8 weeks to finish for market from either the range or feedlot, they should be sheared with the regular comb. If on the other hand they will finish in 3 to 4 weeks, a No. 5W comb should be used. If the sheep need only 10 days to 2 weeks to finish, shearing with a Texas goat comb will produce a No. 2 skin in that time.

The special combs also have another use in handling the shearing operation in cold or otherwise unfavorable weather. The use of the No. 5W comb leaves about 1/2-pound of wool on the animal, and the Texas goat comb around a pound, in both cases providing some protection against cold or other adverse weather hazards.

It is clear that if we are to reach the goal of 15-1/2 million shearling skins, counting imports, by the end of next year we will have to get a large number of them from the feedlot lambs this coming fall and winter. The shearing of feedlot lambs will be an innovation for many feeders. While the shearing of fed lambs has been done as a regular practice in a few producing areas, it is not the custom in many of the commercial feeding sections. The problem of getting shearers should not be insurmountable for the great majority of them work normally only from March to July and ought to be available for fall and winter shearing if arrangements are made far enough in advance. It is understood of course that many areas had difficulty in obtaining the services of shearers during the regular shearing season this year, due in large measure to war industry's call for workers and to actual military service. It is none too early for a consideration of any special problem phase likely to arise in connection with the production of the largest possible volume of shearlings from the coming fed-lamb crop, and to work out solutions for them.

Our armed forces are in vital need of the product. We cannot afford to let them down. It's an opportunity to make a victory contribution. We will not fail.

Summed up, the job is, to keep at the lowest possible minimum the number of sheep and lambs going to slaughter with less tha 1/4 inch of wool - 1/2 inch would be better - and to have as large a proportion of fed and other slaughter lambs that normally go to market in full fleece, to carry only shearling-length wool. It is also well to remember that a shearling skin produced by a normal regrowth of wool following shearing is superior to a freshly clipped animal or pelt even though the wool length is the same.

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NEW FILM STRIPS

The following film strips have been completed by the Extension Service in cooperation with the Bureau of Animal Industry. They may be purchased at the prices indicated from Photo Lab, Inc., 3825 Georgia Ave., N.W., Washington, D.C., after first obtaining authorization from the U. S. Department of Agriculture -

Series 627 - Pigs Can't Shoot - Swine management for food-for-freedom production - 62 frames; single, 55 cents; double, $1.25

Series 632 - Bang's Disease - 20 frames, single, 50 cents.

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"FOOD FOR FREEDOM" FROM THE LIVESTOCK FRONT

(A continuation of the series of State reports carried in the last two issues)

- - -

MICHIGAN -

The agricultural front in the United States from the standpoint of livestock is finding itself in a position to make maximum contributions toward feeding our own people and at the same time render all possible aid to our allies. Livestock numbers are at national peaks. Seventy-four million cattle and 55 million sheep exceed previous figures. Something like 90 million hogs available for 1942 market will far exceed any previous marketing. Feed crops are also available in quantities supported with enormous surpluses. Labor supplies are greatly reduced. Michigan workers per farm will be reduced from 1-2/3 workers as of the 1940 census period to perhaps 1-1/4 or 1-1/3 workers "for the duration." Transportation facilities are being taxed to the utmost. Prices of livestock provide an exceedingly attractive market outlet. All these items encourage a livestock program based on minimum labor and transportation needs, while accompanied by a favorable feeding ratio for the producer.

Michigan's Livestock Situation -

Michigan cattle now number 1,847,000 head or 2 percent increase over 1941. Half of Michigan's market cattle come from dairy herds. Forty percent of Michigan's cattle come from farms with less than 10 head per farm. Nineteen percent of Michigan's market cattle come from farms feeding three animals or less. Only 15 percent of Michigan's market cattle go through feed lots of over 10 head per lot. This program scattered over 150,000 of Michigan's farms offers extension workers a big challenge in feeding and management practices. More cattle will be grown and fattened on pasture, often supplemented by grain, perhaps in self-feeders. More seeded hay land will be given over to commercial cattle than in former years.

Michigan's sheep numbers, now 1,046,000 head, show a decline of 4 percent from 1941 because of increased interest in cattle and hogs. Poor management practices, poor fences, parasites, wild animals and sheep-killing dogs are contributing factors toward reduced Michigan sheep numbers. Government goal for Michigan on sheep allowed only 1 percent decrease. Constant service by extension workers stresses remedies for difficulties mentioned above.

Mighigan's hogs show a total increase of 4 percent over 1941 with a 12 percent increase in sows and gilts. The Government called for 10 percent increase in hogs. County meetings with producers, many of them new men, have covered management practices primarily.

New brief circulars on management practices have been made available to Michigan producers on all animal husbandry activities. Radio broadcasts twice weekly called the "Farmers Are Asking Program" and conducted by extension specialists cover questions contributed by farmer producers.

Wartime Practices for Livestock Producers -

1. Sheepmen should sell all possible nonproducing sheep carrying 1/2 to 1 inch of wool to help supply pelts for military uses.

2. (a) Hog producers should avoid much marketing next December and January when the heavy run of the year may exceed ability of packing houses to handle it.

(b) Feed hogs to heavier weights.

3. (a) Cattlemen should market cattle closely to help in the demand for beef and also avoid excess numbers of breeding stock.

(b) Cattlemen should dispose of unsatisfactory animals and restock with animals of the breed and quality desired for the post-war period. -- E. L. Benton, Extension Specialist in Animal Husbandry.

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NEBRASKA -

Our regular extension program has been more or less adjusted to meet the needs of the present war situation. During the drought years many Nebraska farmers were forced out of the hog business because of lack of proper grain feeds for hog production. However, within the last two years grain production has been more favorable and too, the price of hogs has been more of an inducement for hog producers to get back into the business

The war program has brought about a request that Nebraska hog farmers meet the 1942 production goal. There was an increase of 57 percent in the 1941 fall pig crop over the 1940 crop. With the breeding of sows for the 1942 spring crop, Nebraska farmers indicated that spring production would be increased 60 percent over the same period a year before. Even with these increases, Nebraska hog farmers are well under what could be termed our normal production. But with more grain available on every farm, more hogs will become a part of that farm business.

Our extension program during the past winter has been devoted to better feeding methods and of course, has stressed sanitation and other timely management practices. What seemed to be a high price for tankage and other protein supplements caused many hog producers to neglect the feeding of this all-important constituent in their hog ration. In spite of the fact that our program encouraged the feeding of protein supplements with the welfare of the current litters in mind, many brood sows were fed only corn and what refuse feeds were available on the farms. This was a mistake as evidenced by the size and thrift of many spring litters. The litters have not been so large as we would normally expect. The pigs have not been so strong and naturally, there has been considerable loss in the spring pig crop. Even with these handicaps, prospects are that our Nebraska hogmen will meet the goal that has been allotted to them for 1942.

Beef cattlemen, like the hogmen, were given a goal of 18 percent increase in slaughter. The total cattle population according to the 1940 census

was down 3.6 percent for the State. In some sections, however, the county population of cattle had increased quite materially. The marketing goal is being met by the constant culling of cow herds and the marketing of feed-lot cattle as rapidly as they are ready for the market. In my contacts with ranchmen, their program of marketing nonproducing cows is going to continue as fast as these cows get fat enough for market. Many of them are not going to wait for the usual fall round-up of the nonproducing and dry cows but are going to get these cattle off their ranches so that other cattle will have more grass.

The recent program that we have fostered is that of wool production and the production of early spring lambs. Much of our effort has been on the wool side in the way of dipping demonstrations. A week of dipping demonstrations was conducted this spring in the counties along the south side of the State. Many of the farmers did not know just what damage ticks and lice were causing to their sheep and wool. These and former demonstrations have brought out the value of this one management practice.

A number of county lamb and wool shows were held this spring with the final show at Omaha on June 4.

Probably one of the most interesting and significant phases of our program is shown in the 4-H club division. Up to April, 50 more individuals were participating in baby-beef and other types of beef clubs. There was an increase of 60 members in sheep clubs and 600 in swine clubs, 400 in dairy clubs, 400 in poultry clubs, and 1,542 in victory home and garden clubs. The club work in cooking and canning showed an increase of 760 and 350 individuals respectively. With these boys and girls in the production projects many farms will be rehabilitated with good producing stock of the several kinds. At the same time they will be contributing in a large manner to the production of meat animals that are naturally going into the meat production program of the country. --W. W. Derrick, Extension Animal Husbandman.

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PENNSYLVANIA -

One hundred and ninety-six general livestock meetings have been held in Pennsylvania since January 1, 1942. These meetings were held in the interests of the horse, beef-cattle, sheep, and swine producers of the State. Fifteen reels of motion pictures, and 250 two-by-two-inch colored slides on good breeding, intelligent feeding, sanitation, and efficient marketing were used in these meetings to encourage increased meat production. Forty livestock organizations, the press, and approximately 600 farm leaders were used in the conduct of the program. The livestock extension office has prepared considerable material on livestock production which is being used on the radio by the county agents.

In accord with the request of the Secretary of Agriculture for additional pork production, a new motion picture was prepared and used at some

76 swine meetings during the winter. The title of this picture is "The Pork Way to Victory." The production of pork for home consumption is especially encouraged. Assistance was given the six State swine breeders' associations in the January sale where 283 bred gilts were sold to 230 farmers in 41 of the 67 counties in the State. Pork production in Pennsylvania in 1942 will be increased approximately 18 percent.

A special lamb-improvement program was set up in three counties last year. Producers in these counties agreed to follow a few definite management practices. Three thousand lambs were produced by 55 demonstrators in this project. The following is a paragraph taken from a letter received from the county agent in Lawrence County:

> "We took 47 lambs to Pittsburgh today, of which 37 averaged 80 pounds each and sold for $13.50, which represents one dollar above the Pittsburgh market today."

This new project will be developed in a number of additional counties during 1942.

Four hundred and twenty-six purebred rams were placed by the livestock extension specialists with commercial lamb producers in Pennsylvania during 1941. These rams should sire approximately 12,000 lambs this year.

Thirty-one county sheep and wool growers' associations will be given assistance in marketing cooperatively over 600,000 pounds of wool for approximately 4,600 farmers during 1942. These same organizations marketed 584,886 pounds in 1941. The following is a paragraph from a letter received from an eastern wool buyer:

> "The last batch of the Somerset boys' clip came in last evening with Mr. Shober, and we are pleased to say that the pool contained as fine a lot of medium wool as we have ever bought from your State. I can truthfully say that the Extension Service has accomplished wonders with the sheep raisers in Pennsylvania. You know we handled those wools in the pre-pool days, and there is as much difference between what they were and what they are now, as there is between night and day."

Forty-three beef cattle meetings and cattle feeders' tours were held during the winter. The cattle feeders were encouraged to put plenty of weight on their cattle.

Special emphasis is being given to producing sufficient meat for home consumption on the farms of Pennsylvania. To make this part of the program effective, killing and cutting demonstrations are being held in several communities of each of 35 counties to show the most efficient methods. The cooperator of the home economics department is being used at these demonstrations to teach the best methods of preserving and canning, and the proper procedure for storing in freezer lockers. --W. B. Connell, Extension Animal Husbandman.

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SOUTH CAROLINA -

The hope that the South Atlantic Seaboard may one day produce enough livestock to feed its own people has been in the hearts of livestock extension workers in this and adjoining States for a long time. Statistical reports on the beef cattle and hog populations and production have been watched anxiously for signs of encouragement. But while improvement has been registered, progress has been slow and we are still far short of our goal.

Added to the fact that more meat produced here would provide better diets and release that from other sections for war needs and export, we are confronted with the fact that meat shipped to this section taxes the facilities of processors and transportation concerns.

The South Carolina 1942 production assignment for increase was 19 percent in hogs and 3 percent in beef cattle. The results of a survey conducted jointly by the Extension Service and AAA of all farms under contract in the State indicated that farmers planned to increase hog production 28 percent and beef cattle for sale 14 percent in 1942. Recent checks made by county planning boards and other agencies indicate that substantial increases have been made.

Further evidence that hog production has been stepped up is presented in the increased volume of hogs handled by the State's 17 cooperative hog shipping associations. Such association reports show that more hogs were sold during the first 5 months of the current year than during any previous year of their existence (14 years). These cooperative associations furnish a means of marketing hogs which may result from the efforts of farmers to increase hogs at this time. Apparently good prices, together with a desire to aid in the war effort, are resulting in farmers' increasing livestock production to the capacity of the available feed supply. In presenting the problem to farm people and enlisting their support, as full use as possible has been made of the organized farm communities in every county which were set up as a means of improving the living of farm families.

Means of increasing production have been (1) local newspapers, supplied with informative articles on reducing losses and stepping up gains through better rations and care, and (2) radio programs during the farm hour. Community meetings have served to provide a means of reaching farm people in several of the more important livestock-producing counties. The patriotic appeal has had strong pulling power, but the effect of substantially higher prices for livestock provides an urge to produce, which cannot be denied in these days of relatively low farm income in this section. --J. R. Hawkins, Extension Animal Husbandman.

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WISCONSIN -

If a livestock program is founded upon solid foundation in normal times the only thing needed when emergencies arise is growth and further development. If such programs are built in sound manner at the beginning they will stand

the enlargement, without undue strain, when increased output becomes necessary. Wartime production in livestock is normal production stepped up for emergency needs.

This is the philosophy back of one of the best sheep programs ever outlined in Wisconsin. It is the philosophy of County Agent Oscar Woelfel, of Pepin County, in the formation of his plan of sheep improvement. It is the philosophy that Woelfel has drilled into his sheep producers, for the last half dozen years, and that is now beginning to bear fruit in noticeable volume.

The plan was built upon the use of good rams. A few years ago the ordinary grade flocks in Pepin County were being bred to ordinary grade, and sometimes, ordinary purebred sires. County Agent Woelfel was not satisfied with that situation and when the Wisconsin ram truck began operations in 1936, Pepin County farmers became some of the best buyers of good rams offered in truck sales. With each successive year the number of rams sold increased. In 1941, with the assistance of the Animal Husbandry Department of the College, an expansion and development took place which embodied a whole program of sheep improvement. In fact, truck ram sales had already stimulated some good production practices in the county.

In 1938 a portable dipping vat was built by the vocational agriculture department of the Durand High School and by 1941 practically every good flock of grade sheep in Pepin County was included in the dipping and drenching program. Every buyer of purebred rams was a member of the Wisconsin Cooperative Wool Growers' Association, and each used his wool grade sheet to guide him in the purchase of rams to correct any digression from medium wools of good staple. When fleece production dropped off in the ewe lambs kept for replacement, care was taken to choose a ram with better than average fleece qualities for the succeeding lamb crops. When wool grades began to run a bit to the coarse side, attention was once more given to the fleece on the new sire. The grading and weight reports from the cooperative wool sales were excellent educational information.

With this background, the 1941 steps became a logical enlargement of the program of improvement. The parasite war had been won. The wool had been improved. Good rams had been introduced. But other things remained to be done.

In September nine livestock sales agencies, stockyards, and packing companies, and the wool growers' cooperative were asked for assistance. Each agreed to contribute the cost of one good purebred ram, to be sold in Pepin County, to increase the number of purebred-ram owners. At a meeting of these contributors, the livestock program was outlined. The rams were delivered in October, and a total of 24 head were sold.

Now, May 1942, the lamb crops from these rams have arrived. A meeting has just been held to outline the "where do we go from here?" As a first step, a county association of purebred-ram owners has been organized to direct the work of improvement. The association has set up five definite objectives. These are:

1. To perpetuate the use of purebred rams among association members with minimum cost by having each member contribute annually to the association -
   (a) One market lamb of quality and value approved by the association committee, or
   (b) Two fleeces of wool of quality and value approved by the association committee, or
   (c) A cash contribution of 10 dollars.

2. To extend to association members, without cost, a lamb-grading service to consist of:
   (a) Sales agency grading at sales terminal
   (b) Field service grading at home
   (c) Combination of the two methods on market lambs and breeding lambs respectively
   (d) Selection of at least 20 percent of ewe lambs for replacement in breeding flocks.

3. To extend to association members without cost, wool-grading service -
   (a) Through cooperative marketing agency
   (b) Through sales reports or other sales outlets
   (c) Through comparison of wool-grade reports of annual sales

4. To extend to association members a plan of management improvement through information from:
   (a) Report on feeding and care
   (b) Report on parasite control
   (c) Report on disease control and prevention
   (d) Report on dog losses

5. To extend to association members all possible assistance in sheep improvement through such agencies as -
   (a) College of agriculture
   (b) County agricultural agent
   (c) County agricultural committee
   (d) County fair
   (e) Lamb marketing agencies
   (f) Wool marketing agencies
   (g) Other agencies interested in development and progress of sheep production in Pepin County

The perpetuation of use of purebred rams is probably of greatest importance. If new buyers are to be included in the association they may be added only through the association's permission and must abide by the association's bylaws and established rules. Choice of breed may be left entirely with the purchaser, but assistance will be given in location and selection of rams needed. If the contributions from ram users exceed the amount needed for purchases, the excess will be left with the association as a reserve fund to cover death losses in rams purchased. In short, each sheep producer is guaranteed the use of a purebred ram each year for a cost of 10 dollars.

The lamb grading will be conducted at the sales point, when market lambs are sold. The ewe lambs withheld for replacement may be graded at home. Field

service from the sales agencies or the college of agriculture will permit this work to be done at the farm.

The wool grading, the disease and parasite control, and the reports on feeding and care are already being accomplished. Reports on dog losses will become a part of the established program. Assistance in selection of replacement ewe lambs will be given by all agencies instrumental in setting up the original plan.

The project has not been completed. It is, however, sufficiently established to guarantee completion. Six years of interest among the sheep producers of Pepin County and contributing agencies is enough evidence of the attitude of progress. The program will assure such progress . --James J. Lacey, Extension Animal Husbandman.

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WYOMING -

The production of beef cattle and sheep in Wyoming is largely a range proposition. Ranges, for the most part, were stocked about to a normal or so-called safe-carrying capacity at the beginning of this season. Slight increase in numbers may be possible in some instances in an effort to produce more meat and wool to help win the war, but generally an increase in numbers is not possible. The efforts of extension workers, therefore, have been and are being directed to a greater return from the animals on hand, as well as an increase in marketings of the older and less desirable cows. This means a leveling off in the number of cows maintained, resulting in younger, more prolific, better-type breeding herds when the war is over. It is also possible to produce somewhat more grass and hay, particularly on meadow and crop lands in our State. Other extension specialists are directing their efforts along this line of producing more feed for our livestock. This idea of producing more through better care and management is not new to us but the response is stimulated through the realization that it is now vital to the freedom of our country.

When the production goals came out last fall they were first given to our county agricultural agents. At our annual extension conference, held last December, definite outlines of methods and subject-matter recommendations pertinent to our stockmen were presented and discussed with the agents.

In discussing the matter of saving a larger percentage of the calf crop, an interesting observation was presented by Russell Thorpe, Secretary of the Wyoming Stock Growers' Association and an early Wyoming cattleman. He stated that the average stockman does not give enough attention to saving the smaller and weak calves, and that if they would direct more effort along this line, our calf crop could be increased and thereby realize an immediate increase in the marketing of beef. He expressed the belief that sheepmen are more concerned over the loss of a lamb than are some cattlemen over the loss of a calf. These thoughts were further developed and made the basis of specific recommendations used by the agents and leaders through radio, meetings, newspaper publicity, and circular letters.

In February an illustrated circular was published in which all specialists listed suggestions in their field for stepping up food production. This publication is entitled, "Wyoming, In Step with Wartime Needs." The following suggestions for meeting the beef goals were included among the recommendations -

1. Careful Section of Breeding Stock - During 1942 beef prices will undoubtedly be good. This, then, is a good time to put finances in shape and save the prolific breeding animals of the best quality, type, and breeding. The use of good bulls should be stressed more than ever.

2. Saving a Larger Percentage of the Calf Crop - The percent calf crop is one of the most important factors influencing pounds of beef marketed per producing unit. Make certain that the breeding herd has sufficient of all feed nutrients to keep in thrifty, strong condition for efficient breeding and to develop the unborn calf so that it will be strong when dropped. Give special attention to weak calves and those born under adverse weather conditions.

3. Cutting Down on Death Losses - Animals are lost from disease, poisonous plants, and other similar causes. Call on your veterinarian for help, call on your county agent and the University for the latest information on poisonous plants, feeding, and other problems.

4. Increasing the Weight of Cattle Marketed - Not many cattle are feedlot fattened in Wyoming. The full development of young stock and the best utilization of our grass, hay, and other feeds should bring about an increase in the weight of some of the cattle marketed.

No special increase in the amount of lamb and wool produced was called for by the USDA goals. However, it is felt that any increase our sheepmen can make will certainly be of help in this war effort, particularly in wool. The regular Wyoming sheep improvement program of range culling and selection has been greatly enlarged upon this year. We now have range sheep cooperators in every county. The plan as demonstrated and used by us in selecting breeding animals for (1) length of fleece, (2) density of fleece and (3) size and type of body is spreading rapidly throughout the State. Records of cooperators show an increase of from 2 to 3 pounds more wool per ewe and a greater and more uniform lamb crop by following this definite system of culling and selection for five years. The first culling results in a difference of from 1/2 to 2 pounds of wool between the selects and those marked for discard.

The last two months the writer has culled slightly over 40,000 ewes. These were mostly yearling ewes as the cooperators had saved extra ewe lambs last fall. This all adds materially to the wool and lamb produced. Since last fall Dean J. A. Hill and the writer have directly worked with 10 percent of the sheep in the State. We have no accurate record of how many additional sheepmen are following improved methods of selection and management as a result of our demonstrations.

Under range conditions much depends on weather conditions, particularly at lambing and calving time. This spring losses have been heavy due to a cold, wet, slow spring. However, it is during adverse conditions that an active educational program is all the more necessary. -- Anton Fellhauer, Extension Livestock Specialist.

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SUBSTANTIAL CITIZEN

"The American live stock farmer is a substantial citizen. He is engaged in a business of fundamental importance, the conversion of inedible products of the soil into the finest foods that man knows; his investment is in the soil, thus he is a capitalist and a believer in protection of property rights; he is a family man, cherishing America's greatest institution, the home; he is an important business man in his own community, and in many cases far beyond his own community, he is a man of good business judgment, else he could not succeed in a business as complicated as the handling of manufacturing machines that are alive and so ever-changing; he is well-informed, for daily he is called upon to match wits with the vagaries of nature's impositions; and, by no means last, he is a good man to meet and know, for his understanding of the dumb beast gives him a better understanding of, and greater tolerance for man ...

"Yes, indeed, the American live stock farmer is a substantial citizen, more so than he himself is apt to realize." --Chicago Daily Drovers Journal.

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The best form of efficiency is the spontaneous cooperation of a free people. --Woodrow Wilson

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TAKE NOTICE

This will be the final issue of this publication until after the war. This action is being taken as a result of the policy that periodicals of the house-organ type be discontinued during the present emergency.

Special news letters will be used during the interim to keep livestock extension specialists advised regarding matters of particular interest and importance. Send in to us reports of your experiences.

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LET'S FEED THE OIL MEALS

By U.S.D.A. Specialists

Expected increased production of oil meals and cake in 1942 and 1943 provides stockmen and farmers an opportunity to feed better-balanced rations than they have customarily fed. With a favorable growing season this year, the supply of plant protein supplements will approximate 7,200,000 tons, the greatest volume on record and about 107 pounds per animal consuming unit. Most of the expected increase over last year, which will approximate 1,400,000 tons, will be in the form of soybean and peanut meals and cake. The supplies of cottonseed meal and cake will increase only slightly, gluten feed will remain about the same, linseed meal and cake will decline somewhat, and the importations of copra cake and meal will be negligible.

It will be to the advantage of livestock producers and feeders to utilize larger amounts of plant protein supplements in their operations for a number of reasons. It is a time when we need all the meat and other livestock products we can possibly get. This country and our allies are badly in need of all the fats, oils, and animal proteins we can produce.

Increased vegetable oil production entails increased oil meals and cake. These by-products can be used primarily in two ways. They can be used in animal feed rations, which is their most productive outlet, or they can be used to fortify commercial fertilizers in nitrogen content. If the entire prospective supplies of edible oil meals were used in supplementing feeding rations, there would still be a shortage to properly do the job, for stockmen and farmers on the average are only feeding about 80 percent of the protein required for most efficient production, and efficiency in production counts in times like these.

With our increased livestock, dairy, and poultry production programs now under way, already local shortages of feed grains are being reported. Indications are that these shortages may become more general before the end of 1942. Increased supplemental feeding of protein feeds to livestock will greatly conserve grain feeds. It is for these reasons that advantage should be taken of the existing situation.

Furthermore, the favorable relationship between the prices of protein supplements and the present prices of livestock and livestock products should be an added incentive to greater consumption of oil meals through feeding. Such relationship may become even more favorable as plans are under consideration to make soybean oil meal available at the mills at a figure near or perhaps below the prevailing prices. Moreover, with a somewhat smaller supply of feed grains in prospect for the coming year and with further expected increases in livestock production, feed-grain prices will probably average higher than in the current season.

Soybean meal is a splendid protein supplement for all classes of livestock. For dairy cows and sheep it is fully equal to linseed meal or cottonseed meal. As a sole supplement for fattening cattle it is equal to cottonseed meal and excelled only by linseed meal. For hogs and poultry the thoroughly cooked product is an excellent feed.

Soybean meal is especially rich in protein, and the protein is of excellent quality. Soybean meal is lower in fiber content than cottonseed meal or linseed meal. It does not carry vitamins A and D, and it is rather low in calcium, and not rich in phosphorus content.

Extension workers will do well to acquaint their farmers and stockmen with the high-protein feed situation and point out to them how, in general, they may make contributions to the food-for-freedom program, and profit for themselves by taking advantage of the present opportunity to feed better-balanced rations to farm animals.

Local availability of the feeds and the price relationships between the various plant and animal sources of high-protein feeds, as well as their suitability for different classes of livestock and phases of production, all are factors to consider in the formulation of a better feeding program. The main point is that the opportunity is open.

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PROTECT THE WORK STOCK

Encephalomyelitis, or sleeping sickness of horses, has been gradually increasing in the United States during the last three years, according to a survey report recently published by the Bureau of Animal Industry.

In the year 1941, the survey shows, more than 36,000 cases of the disease were reported from 34 States and 99 percent of these cases were west of the Mississippi and north of the Ohio Rivers. Most of the cases reported from the Western and Northern States were of the western type. This type of virus is fatal to horses in about 25 percent of the cases. The eastern type, which is fatal in nearly 90 percent of the cases, was diagnosed in only a few States. All cases included in the 1941 report occurred during the period from April through November. Usually the disease did not occur after the first killing frosts.

The best means of protecting horses against encephalomyelitis is by vaccination. The immunity produced by vaccination will last for at least 6 months. The most desirable procedure is to vaccinate a month or more before the disease usually appears in a locality. Two or more doses of the proper type vaccine should be administered intradermically by a veterinarian.

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RECENT PUBLICATIONS

(This list is limited to publications of special interest to animal husbandry extension workers. Requests for copies of publications should be addressed to the agencies issuing them.)

Federal

"Sheep Migration in the Intermountain Region," by H. R. Hochmuth, et al - Bureau of Agricultural Economics, U.S.D.A., Washington, D. C. - Circular No. 624, pp. 70, illus., Jan. 1942.

"Meat Animals - Farm Production and Income, 1935-1941" - Bureau of Agricultural Economics, U.S.D.A., Washington, D. C. - 4-page mimeograph, issued April 30, 1942.

"Farm Horses and Mules Will Help Win" - Bureau of Agricultural Economics, U.S.D.A., Washington, D.C. - BAE-Extension Flier #6, pp. 4, illus., June 1942.

"Internal Parasites of Cattle," by Gerard Dikmans - Bureau of Animal Industry, U.S.D.A., Washington, D.C. - Circular No. 614, pp. 40, illus., Jan. 1942.

"Soybean and Korean Lespedeza Hays Compared with Alfalfa for Wintering Beef Calves," by Earl W. McComas, et al - Bureau of Animal Industry, U.S.D.A., Washington, D. C. - Circular No. 629, pp. 8, Jan. 1942.

"Tenderness of Beef as Affected by Aging With and Without Subsequent Freezing," by R. L. Hiner and O. G. Hankins - Bureau of Animal Industry, U.S.D.A., Washington, D.C. - Reprint from Sept. 1941 issue of Refrigerating Engineering, pp. 4.

"Nutritive Properties of Lard and Other Shortenings," by Ralph Hoagland and George G. Snider - Bureau of Animal Industry, U.S.D.A., Washington, D. C. - Tech. Bull. 821, pp. 12.

"Yearlong Grazing of Steers in the Northern Great Plains," by W. H. Black and V. I. Clark - Bureau of Animal Industry, U.S.D.A., Washington, D. C. - Circular 642, pp. 16, figs. 8.

"Estimated Production and Consumption of Federally Inspected Meats, 1941" - Mimeographed tables for each variety of product, issued by the Agricultural Marketing Service, U.S.D.A., Washington, D. C.

State

"Protein Supplements in the Feeding of Pigs," by E. H. Hughes and N. R. Ittner - California Experiment Station Bulletin 661, Feb. 1942, pp. 12.

"Bloat in Cattle," by H. H. Cole, et al - California Experiment Station Bulletin 662, Feb. 1942, pp. 22, figs. 9.

"Crotalaria for Forage," by Geo. E. Ritchey, et al - Florida Experiment Station Bulletin 361, Aug. 1941, pp. 72, figs. 17.

"Livestock Judging," - Idaho Extension Service Bulletin No. 136, Oct. 1940, pp. 71, figs. 48.

"Fattening Lambs for Market," by W. G. Kammlade - Illinois Extension Service Circular 523, March 1942, pp. 35, illus.

"Experience of Some Iowa Farmers With Cattle Feeding," by John A. Hopkins and Robert B. Elwood - Iowa Experiment Station Bulletin P35, Dec. 1941, pp. 24, figs. 6.

"Fight Diseases and Parasites of Livestock," - Iowa Extension Service Pamphlet 35, pp. 8.

"Beef Production," prepared by T. A. Ewing, et al - Missouri Extension Service Circular 442, Jan. 1942, pp. 32, figs. 8.

"Supplementary Value of Various Feedstuffs in Brood Sow Rations," by A. G. Hogan and S. R. Johnson - Missouri Experiment Station Research Bulletin 332, pp. 35, figs. 4, tables 35.

"Record of Performance in Hereford Cattle," by Bradford Knapp, Jr., et al - Montana Experiment Station Bulletin 397, Dec. 1941, pp. 30, tables 7.

"Growth and Production Factors in Range Cattle," by Bradford Knapp, Jr., et al - Montana Experiment Station Bulletin 400, March 1942, pp. 13.

"The Use of Phosphorus and Calcium Supplements for Range Livestock in New Mexico," by J. H. Knox and W. E. Watkins - New Mexico Experiment Station Bulletin 287, Feb. 1942, pp. 18, figs. 4.

"Motor Transportation of Livestock," by G. F. Henning and E. B. Poling - Ohio Experiment Station Bulletin 625, Dec. 1941, pp. 49, tables 43.

"Fattening Lambs on Corn and Cottonseed Meal and on Alfalfa and Prairie Hays," by Hilton M. Briggs - Oklahoma Experiment Station Bulletin B-252, Dec. 1941, pp. 14, tables 6.

"Farm Meats," by M. L. Buchanan and Inez Prudent - West Virginia Extension Service Circular 327, Oct. 1940, pp. 51, figs. 32.

"Grass Silage," by G. Bohstedt, et al - Wisconsin Extension Service Circular 299, rev. Aug. 1941, pp. 16, figs. 4.

"Feeding and Management of Market Hogs," by J. M. Fargo, et al - Wisconsin Experiment Station Bulletin 454, Dec. 1941, pp. 22, figs. 4.

Other

"Building Better Pastures," by W. L. Burlison and Robert F. Fuelleman - pp. 28, illus., published by Horse and Mule Association of America, Inc., 407 So. Dearborn St., Chicago, Ill. pp. 27, illus. (Booklet 267--Price 25¢)

"Eliminating Waste in Meat Production" - 1941 Report of the National Live Stock Loss Prevention Board, 700 Exchange Building, Union Stock Yards, Chicago, Ill., 19-page mimeograph.

"Livestock Production," a text-book by Walter H. Peters, Chief, Division of Animal and Poultry Husbandry, University of Minnesota, St. Paul, Minn., 450 pages, 6 x 9, $3.50.

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There is something about farming and rural life that builds strong, sturdy, self-reliant, independent thinking men and women. As you prepare the soil and sow the seed, cultivate the crops and gather the harvests, feed the cattle and care for their young--as you work in wind and rain and sunshine, winter's cold and summer's heat--something is put in your soul that makes you understanding and patient, something that makes you stick and follow through, something that enables you to carry responsibility and do things. --Dr. C. B. Smith

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It's funny that it never occurs to a boy of 18, that some day he will be as dumb as his father. --Zeke Carsil in Southern Agriculturist.

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